PEACE/WILLISTON
FISH & WILDLIFE
COMPENSATION
PROGRAM

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Fisheries Program
Annual Report 1996/97

B. G. Blackman
April 2000

PWFWCP Report No. 221

The Peace/Williston Fish & Wildlife Compensation Program is a cooperative venture of BC Hydro and the provincial fish and wildlife management agencies, supported by funding from BC Hydro. The Program was established to enhance and protect fish and wildlife resources affected by the construction of the W.A.C. Bennett and Peace Canyon dams on the Peace River, and the subsequent creation of the Williston and Dinosaur Reservoirs.

Peace/Williston Fish and Wildlife Compensation Program, 1011 Fourth Ave. 3rd Floor, Prince George B.C. V2L 3H9

Website: *www.bchydro.bc.ca/environment/initiatives/pwcp/*

This report has been approved by the Peace/Williston Fish and Wildlife Compensation Program Fish Technical Committee.

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PEACE / WILLISTON FISH AND WILDLIFE COMPENSATION PROGRAM

FISHERIES PROGRAM ANNUAL REPORT 1996/97

STEERING COMMITTEE MEMBERS:

Ted Down (B.C. Environment)
Ron Fernandes (B.C. Hydro)
Colin Gurnsey (B.C. Hydro)
John Metcalfe (B.C. Environment)

TECHNICAL COMMITTEE MEMBERS:

Nick Baccante (B.C. Environment)
Don Cadden (B.C. Environment)
Carol Lamont (B.C. Hydro)
Bob Westcott(B.C. Hydro)

TECHNICAL ADVISOR

K. Ashley (B.C. Environment)

PROGRAM FISHERIES BIOLOGISTS

B. Blackman (B.C. Environment)
A. Langston (B.C. Hydro)
R. Zemlak (B.C. HYdro)

PROGRAM ADMINISTRATION

Brian Blackman and Arne Langston continued as full time biologists responsible for administering, managing and conducting research and enhancement projects within the Fisheries Program of the Peace / Williston Fish and Wildlife Compensation Program (PWFWCP) in 1996/97. Randy Zemlak provided full time technical support for the program. Various consulting firms, contractors and individuals were employed to undertake work on a variety of projects. The Fisheries Technical Committee membership changed this year with C. Lamont replacing O. Fleming as a B.C. Hydro representative and N. Baccante replaced T. Euchner as a B.C. Environment representative. The Steering Committee membership was R. Fernandes, and C. Gurnsey from B.C. Hydro and T. Down and J. Metcalfe from B.C. Environment.

Administrative activities of the Program biologists included preparation of the 1994/95 Annual Report and the 1995/96 Quarterly Reports, project accounting and contract management

PROGRAM PLANNING

A preliminary meeting was held in Ft. St. John between B. Blackman (Senior Project Biologist), N. Baccante (B.C. Environment) and B. Westcott (B.C. Hydro) to solicit input on the 1997/98 program. One Technical Committee meeting was held to review the 1996/97 projects, finances and prepare a budget for the 1997/98 Fisheries Program, which was submitted to the Steering Committee for approval.

Additional funding proposals were prepared and submitted for:

Funding Source	Project	Amount
Forest Renewal B.C.	Table River Arctic Grayling Studies	90,937*
Forest Renewal B.C.	GPS/ Stream Video Surveys	170,000*
Forest Renewal B.C.	Mesilinka River Inventory	70,000*
Forest Renewal B.C.	Arctic Grayling Radio Telemetry	50,000*
Forest Renewal B.C.	Small Lake Inventory	151,000*
Forest Renewal B.C.	Carbon Side Channel Development	15,000**
Forest Renewal B.C.	Stream Video Surveys	43,750**
		590,687

* funding received ** carry over from previous year

A considerable amount of staff time was expended preparing the funding proposals and managing the additional $591,000. All of the projects were either joint submissions or were developed with input from and the support of the local Forest Companies and Habitat Protection Staff. Copies of all inventory reports will be provided to the Companies and Habitat Protection Staff. Staff time for the completion of past years reports was also charged to planning.

PUBLIC CONSULTATION

Presentations and Meetings

No large Public meetings were held this year. One meeting was held with the Chetwynd Rod and Gun Club to discuss the clubs participation in the Simpson Lake Transplant and to provide information on other program activities.

Natureline/Information Dissemination

Spring 1997 Natureline (No. 8) as well as three information bulletins (Habitat Improvement at Dina Lake No. 3, Simpson Lake Transplant and Dina Creek Enhancement Project) were prepared, completed and distributed.
There were two radio interviews (with CKMK Mackenzie) to discuss program activities as well as one interview (CBC radio) to discuss the Mesilinka Stream Fertilization Project.
Bound copies of reports from previous years were produced for distribution to various agencies

PROJECT SUMMARIES

INVENTORY AND ASSESSMENT

1. Table River

Objective: Gather life history and habitat utilization information on Arctic grayling and to determine enhancement opportunities.

Watershed Restoration (Forest Renewal B.C.) provided an additional $91,000 for this project. This funding allowed more detailed evaluations to be conducted and two technicians from the Saulteau First Nations Band were employed to assist in the project.

Detailed surveys of adult Arctic grayling habitat utilization were carried out in conjunction with habitat availability surveys. This information will be used in the development of a habitat preference model. Young of the year Arctic grayling distribution and habitat utilization evaluations were also completed and the information gathered has already been incorporated into habitat protection issues to protect this critical habitat, which had not been identified previously. Inspections were conducted on a number of potential habitat improvement sites with a BC Environment hydrologist, a Ministry of Forests engineer and a local engineering contractor. Preliminary plans were developed to improve the sites. A large debris jam was removed, using a helicopter and grapple, as a result of the site inspections

It is anticipated that an extensive habitat restoration project and continued habitat utilization work will be carried out in this watershed in conjunction with FRBC and The Pas Lumber Co. Ltd.

2. Arctic Grayling Radio Telemetry

Objective: Determine the spawning areas of Arctic grayling in the Table and Anzac rivers in order that these areas may be documented and protected.
In late August and early September radio transmitters were surgically implanted into 25 Arctic grayling from the Table River and 30 Arctic grayling from the Anzac River. Tissue samples were

taken from all fish for genetic analysis. Six telemetry flights were conducted during the period from September 1996 to March 1997 to determine the distribution of the fish. Most of the Table River fish had moved to overwintering areas by September 24th. About half of the fish over wintered in the Table River while the remaining fish moved downstream into the Parsnip River. The Anzac fish were still in the Anzac on Sept. 24th but only two remained in the Anzac on November 6th. The majority of the Anzac River fish overwintered in the Parsnip River downstream from its confluence with the Anzac. Two fish overwintered in Williston Reservoir. There were no concentrations of tagged fish at a single site and a small number of fish moved short distances during the winter. The physical characteristics of the overwintering sites will be evaluated during summer low flows. Forest Renewal B.C. contributed $50,000 towards this project.

3. Arctic Grayling Genetics

Objective: Examine the genetic structure and degree of similarity of grayling populations within the Williston Reservoir watershed in order to provide baseline information for future projects,

Tissue samples for genetic analysis were collected from the Mesilinka (60) Anzac (30) Table (30) and Nation (27) rivers. Small numbers of samples (<10) were collected from 6 other sites, Samples (30) were also collected from 6 sites in the lower Peace River and 55 samples were received from sites in Alaska and northern B.C. Initial analysis has not detected any genetic variation within watershed stocks but there have been detectable differences between Williston and outside stocks.

ENHANCEMENT

4. Project Maintenance

Objective: Provide maintenance of the Windy Point Upwelling station, Dina Creek spawning habitat /public involvement project and install a program sign at Dina Creek.

Windy Point Lake Upwelling Station was operated successfully and no major repairs were required. There was no formal assessment of the numbers of fish using the upwelling station, but use appeared to be high. Minor maintenance was required at Dina Creek this year. Approximately 400 rainbow trout were observed spawning in the enhanced section of the stream this year (estimated total number of spawners 800-1000).

The Project sign has been installed at Dina Creek, which provides program information and acknowledges the volunteer groups that participated in the project.

5. Mesilinka Fertilization

Objective: Examine the effectiveness of low level inorganic fertilization as a technique to increase size at age and standing biomass of sportfish in this cold nutrient poor system.

The mainstem of the Mesilinka River was fertilized in 1995 and 1996 and initial results are encouraging. Increased periphyton accrual was detectable for more than 15 km downstream from the drip stations. Preliminary results suggest rainbow trout and mountain whitefish numbers have increased two-fold and five-fold respectively. There have also been gains in weight at age for rainbow trout in the treatment sections. The summer snorkel surveys were not conducted this

year due to cold, wet weather, high runoff and poor underwater visibility. Fertilizer for the 1997 season was purchased from this years budget.

6. Stocking and Kokanee Production

Objective: Provide funding for helicopter fish liberation's, incubation, rearing and release of kokanee into the Williston Watershed,

Approximately 84850 rainbow trout were released into sixteen lakes, 55,000 brook trout were released into five lakes and 404000 kokanee were released into three rivers.

7. Gething Creek Bull Trout Transplant

Objective: Transplant adult bull trout from Gething Creek upstream above an impassable falls. This will provide access to new spawning and rearing habitats and may establish a resident population that could contribute to the Dinosaur Reservoir fishery.

The Gething Creek bull trout transplant was unsuccessful this year despite two separate attempts to capture the bull trout. Insufficient numbers of fish were available to justify the project. This could be in part because of the spillage at the W.A.C. Bennett Dam.

8. Simpson Lake Rainbow Trout Transplant

Objective: Establish a self perpetuating population of wild rainbow trout in a barren lake.

The first attempt to move rainbow trout from the intake towers at the W.A.C. Bennett dam into Simpson Lake was canceled because of heavy snow on the access road to Simpson Lake. A second attempt conducted in July was more successful with 62 rainbow trout captured in the intake towers at W.A.C. Bennetf Dam and moved to Simpson Lake. This project was conducted with the assistance of the Chetwynd Rod and Gun Club and the Conservation Officer Service from Chetwynd.

9. Carbon Creek Side Channel

Objective: Create approximately 10,000 m^2 of high quality spawning and rearing habitat for fish species in Carbon Creek and capture and transport mature kokanee returning to Carbon Creek (as a result of the stocking program) to the spawning channel.

Excavation of the channel, construction of a protective berm and access road, site clean up and planting (Canfor provided the seed) was completed by September 1995 (cost $43,000). Flows in the channel were approximately 1.0 m^3 / sec (25cfs) initially but by the end of the construction phase flows had dropped to approximately half that level. However, there was no rain during the month of September and flows in the mainstem adjacent the channel were nearly sub gravel. It appears that the mainstem of Carbon Creek will dry before the channel.

An additional $50,000 was received from Forest Renewal B.C. through a joint submission with Canadian Forest Products Ltd., Chetwynd Division. These funds were used to haul spawning gravel (provided by B.C. Hydro) to the site in March 1996. The gravel was placed into the side channel during the summer using carried over FRBC funds. Flows in the channel have been excellent and revegetation of the disturbed areas has been good,

Attempts to capture pre-spawning kokanee in the embayment for transport to the channel were unsuccessful, many of the fish in the area appeared to have moved up into the streams. Attempts to capture kokanee from the intake towers at the dam were also unsuccessful.

10. Mackenzie Schools Kokanee Rearing

Objective: Assist in an educational program to incubate and raise kokanee in a classroom environment at four Mackenzie Schools.

This project is being carried out in conjunction with the local school district, Department of Fisheries and Oceans and the Mackenzie Fish and Game Association, Tanks and incubators have been set up, permits acquired and eyed eggs delivered to three Mackenzie elementary schools and one high school. There has been a newspaper article and radio interview in Mackenzie dealing with this and other Compensation Program Projects

11. Dina Lake #3 Spawning Habitat Improvement

Objective: Create a self sustaining rainbow trout fishery / public involvement project through a stocking and habitat improvement program.

Dina Lake # 3 is a small lake in the Dina Lakes chain 30 km north of Mackenzie. Rainbow trout have been stocked into this lake with the assistance of the Mackenzie Fish and Game Association and a high use fishery has developed. However, the small inlet stream feeding the lake lacks suitable spawning habitat and as a result there is no natural reproduction and potentially the fish could become spawnbound, To alleviate this situation a spawning habitat improvement project has been initiated. The Mackenzie Rocky Mountain Riders snowmobile club carried 150 bags of spawning gravel to the stream during the winter. The Mackenzie Fish and Game Association and biology students from Mackenzie Secondary School assisted Compensation Program staff in the installation of gravel in Dina Creek #3. Further gravel transport is planned for this winter.

OUTSIDE FUNDING

Just under $600,000 in additional funding has been provided through Forest Renewal B.C. this year for projects in the watershed.

- An additional $91,000 has been provided for work on the Table River Arctic Grayling Project to gather life history and habitat utilization information and identify enhancement / restoration projects in the watershed.
- Video surveys of key streams in the watershed are underway for two separate contracts with a total value of $214,000. These projects were initiated with input from and the support of Timber West and Finlay Forest Industries. This data will include mapping and some preliminary habitat analysis similar to the work done in 1988 by the Compensation Program, but covering different systems.
- The first year of a two year joint Inventory Project with Finlay Forest Industries of the Mesilinka River has been completed at a cost of approximately $70,000.
- FRBC contributed $50,000 towards the Arctic Grayling Radio Tracking Project.
- FRBC has also funded ($151,000) a Small Lake Inventory Project in the Williston drainage. Over 30 new lakes have been surveyed through this project, which has received excellent support from local licensees.
- An additional $15,000 was also available from carry over of last years budget for gravel placement in Carbon Creek Side Channel (joint submission with Canfor).

Each of these projects was carried out in consultation with, and because of, the support of local licensees and habitat protection personnel. Considerable time and effort was required to develop and manage these projects but significant gains have been made both in our program and in our relationships with the local forest companies.

FINANCIAL SUMMARY

The Fisheries Program expenditures during the 1996/97 fiscal year totaled $426,358. Administrative costs were $46,020 (10.8%), Planning $67,396 (15.8%), Public Consultation $13,704 (3.2%) Inventory and Assessment $135,722 (31.8%) and Enhancements $163,515 (38.3%).(Fig 1),

In addition, $590,000 was received from Forest Renewal B.C. to support seven additional projects. Nearly all of this funding was directed towards inventory projects and not all funds were spent. Unspent funds will be carried over to the 1997/98 fiscal year.

Monies expended within the six cost categories were somewhat different than originally budgeted (Table 1). Administration and Planning costs were slightly higher than anticipated because of the extra time required to plan and administer the $590,000 from outside funding. Public consultation costs were reduced because of the cancellation of the Stakeholder / Public meetings anticipated for Strategic Planning, but additional funds were used to produce bound copies of reports from previous years for distribution to the public and various agencies. Inventory and assessment costs were higher than anticipated because of cost overruns on the Grayling Genetics Study. Enhancement costs were lower that expected because of cost savings on several projects and the cancellation of the Gething Creek Bull Trout Transplant.

Fig 1. 1996/97 Fisheries Expenditures

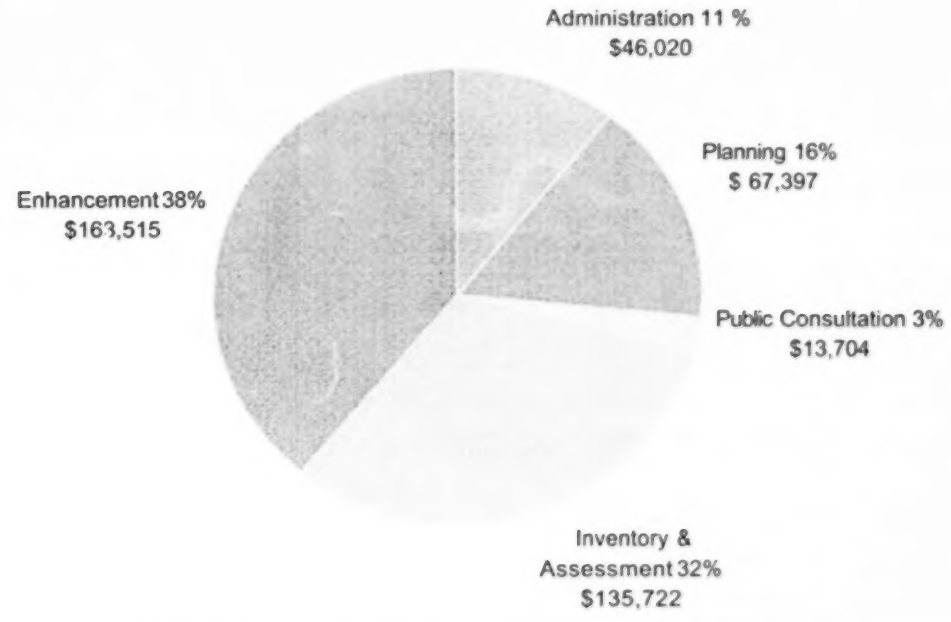

Table 1. Detailed budget expenditures for the 1996/97 fiscal.

COST CATEGORY	SPECIFIC PROJECT	PROJECT COSTS	TOTAL EXPENDED	% EXPENDED	% BUDGETED
Administration			46,020	10.8	9.2
Planning			67,397	15.8	14.8
Public Consultation			13,704	3.2	4,4
Inventory / Assessment	Table R. Arctic Grayling Grayling Radio Tracking Grayling Genetics Study	37,592 62,447 35,682	135,722	31.9	26.1
Enhancement	Mesilinka Fertilization Project Maintenance Stocking/Kokanee Gething Bull Trout Carbon Side Channel Simpson L. Transplant Mackenzie Schools Kok Dina L #3 Spawning Misc.(hab/sp protection)	99,238 9,095 12,807 7,283 16,257 8,156 4,082 5,760 835	163,515	38,3	45.5
Evaluation					
Total			426,358		
Outside Funding	Seven Projects	590,000			